ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
INTEROFFICE MEMORANDUM

DATE: December 9, 1998

TO: ADEQ and ADHS Staff Members

FROM: John Hagen, Deputy Director ADEQ
Barbara Erickson, ADHS Bureau Chief
Kenyon C. Carlson, QA/QC Unit Manager

SUBJECT: Implementation of EPA Method 5035

EPA implemented Method 5035 (*Closed-System Purge-and-Trap Extraction For Volatile Organics in Soil and Waste Samples*) on June, 1997 as part of SW-846 Update III and ADHS' s Office of Laboratory Licensure promulgated Method 5035 on May, 1998. ADHS and the ADEQ QA/QC Unit have agreed to a bilateral postponement of the enforceable implementation date to March 1, 1999. The purpose for the postponement is two fold.

1. Each program within ADEQ which chooses to employ Method 5035 for compliance purposes agrees to adhere to the sampling requirements as outlined by EPA for that particular method. ADEQ possesses the authority to require alternate constraints provided they are more stringent than those outlined in the method.

2. ADHS and ADEQ have agreed to a 60 day delay of method implementation so ADEQ can prepare and conduct outreach to explain the implications to it' s consultants, laboratories and other stakeholders.

I. <u>EPA 5035 method criteria</u>:

A. Samples with contaminant concentrations <200 F g/kg must be preserved using one of the following two procedures:

- Sodium bisulfate preservative is added in the field and a Closed-System Purge-and-Trap system at the laboratory is used for analysis. This technique provides the reporting limits of much lower than 50 F g/kg.

- The sample can be collected using an EnCore™ Sampler and sodium bisulfate

added within a 48-hour period after sampling. The sample will be analyzed using a Closed-System Purge-and-Trap system.

There are a total of 14 days from the time of sampling to complete the analysis. One of the above two procedures must be followed if reporting limits of much lower than 50 µg/kg are desired.

B. Samples with contaminant concentrations >200 µg/kg must be collected using one of the following two procedures:

- A bulk sample may be collected in a vial or other suitable container (brass sleeves, glass jars/vials, etc.) without the use of a preservative. There are a total of 14 days for the completion of the analysis as referenced in Chapter 4, Table 4-1, SW-846 Update III. ADEQ programs have the authority to shorten the holding times, (thereby making the method more stringent), to commensurate with the project's data quality objectives. The sample is preserved with methanol in the laboratory and analysis must be completed within 14 days from the time of sampling.

- A sample collected may be field methanolic preserved. There are a total of 14 days for the completion of analysis from the time of sampling.

II. Excerpts from a memo from EPA, Office of Solid Waste (8/7/1998):

- Preservation is essential for samples having contaminant concentrations <200 µg/kg. EPA acknowledges an exception being calcareous samples that effervesce on contact with sodium bisulfate solution. Under these circumstances, EPA recommends the use of field methanolic preservation or the use of EnCore™ Samplers.

- For samples having concentrations >200 µg/kg, unpreserved samples can be collected as the last resort and the reasons for not preserving the samples must be clearly documented and approved by the relevant regulatory authority. EPA recommends that unpreserved samples be collected in EnCore™ Samplers, stored at 4°C and extracted within 48 hours. EPA also recommends that unpreserved bulk samples be collected for only those materials that can reasonably be expected to contain very high levels of volatiles, and that the rationale for not preserving be clearly documented in a sampling and analysis plan.

III. ADHS/EPA Requirements:

- If the reporting limits desired are <200 µg/kg (~ 50-150 µg/kg), methanolic preservation, either in the field or laboratory, is permissible. The following holding times and the sampling containers criteria must be met. The samples can be field preserved with methanol or sub-cored using EnCore™ Samplers and preserved with methanol within 48

hours. The analysis must be completed within 14 days of sampling.

- If the reporting limits desired are >200 Fg/kg, then the sampling containers and the preservation techniques are project-specific. The samples at a minimum have to be cooled @ 4^0C immediately upon sampling and the analysis completed within 14 days from the time of sampling.

- If the desired reporting limits are much lower than 50 Fg/kg, the samples must be field preserved with sodium bisulfate or sub-cored using EnCore™ Samplers and bisulfate preserved within 48 hours. The analysis must be completed within 14 days from the time of sampling. Sodium bisulfate preservation should not be done for samples containing individual volatile concentrations >200 Fg/kg due to analytical constraints.

- The EPA Office of the Solid Waste is projecting a revision to the existing 5035 method in the spring of next year. Based on EPA's requirements for the revised method, ADHS requirements may change in the near future.

IV. Laboratories Concerns:

- The method has different criteria for the sampling containers and holding times which are dependent upon both the concentrations of contaminants present in the samples and the reporting limits desired. The laboratories must be made aware of in advance as to the required technique (field methanolic/sodium bisulfate preservation or laboratory methanolic/sodium bisulfate preservation or EnCore™ sampling) and the required reporting limits (>200 Fg/kg; ~ 50 - 150 Fg/kg; or much lower than 50 Fg/kg).

- ADEQ program staff must inform the contracted consultants on the requirements of the site-specific projects so the consultants can in turn instruct the laboratories. Examples of the requirements that laboratories must be made aware of for specific projects include:

  - The extent of contamination in the samples (specifically <200Fg/kg or >200Fg/kg).

  - The type of containers the laboratories need to provide (EnCore vs. vials with preservatives).

  - The type of preservation required (sodium bisulfate vs methanol).

  - Communication to the laboratories of any project-specific holding time requirements.